

duration was only a few seconds no real damage has been recorded.

AN interesting series of papers is commenced in the August part of the *Geographical Magazine*, giving Sketches of Life in Greenland, by a lady who was born and passed several years of her life in the country. The papers are likely to show life in Greenland in somewhat new aspects. In the same number is a long and valuable letter from Dr. Beccari on New Guinea, dealing chiefly with its ethnology; he holds firmly to the opinion that the Papuans are a mixed people. Mr. H. P. Malet contributes a paper on the Sea-Level, and Mr. Ravenstein continues his paper on the Census of the British Isles.

IN the last issued number (May) of the *Bulletin* of the French Geographical Society, is a long and valuable Report on the Progress of the Geographical Sciences during the year 1875, by M. Ch. Maunoir. In the same number is the conclusion of M. De Sainte-Maire's Itinerary in Herzegovina, and the address of the President, Baron De La Roncière Le Noury, at the last general meeting of the society.

THE "concours general," or competition between the pupils of the several colleges of Paris, is an old institution established by the University of Paris about thirty years before the French revolution. In 1730 a Parisian *bourgeois*, called Legendre, bequeathed to the University a large sum of money under that condition. The University was put in possession only after a long law-suit instituted by the heirs, who urged insanity, but at last were defeated. A number of celebrated *littérateurs* have been successful candidates. This year the *prix d'honneur* was taken by young Remach, who for the first time since the "concours general" was established, took all the other prizes of his class. The success of the "concours general" for the colleges of Paris was so large that M. Duruy established in the last years of the Empire a competition for all provincial colleges, Paris and Versailles excepted. This year the most successful college was Grenoble, which took eight nominations. Lyons took only seven.

SOME interesting particulars of the great rains which occurred in the north-east of Switzerland in the middle of June last are communicated by M. F. Zurcher to the *Bulletin Hebdomadaire* of the Scientific Association of France. From 8 P.M. of the 13th to the morning of the 14th the enormous quantity of 12·4 inches of rain fell at Zurich—a quantity greater than any monthly fall since the observations began in the end of 1863, the largest monthly rainfall having been 11·3 inches during March, 1876. Owing to so unprecedentedly large a rainfall and the melting of the snows which occurred at the same time, Lake Constance rose nearly 10 feet above its usual level. It may also be noted that heavy rains have prevailed since the beginning of February, so much so that on the morning of June 14, the amount collected, reckoned from the beginning of the year, was 45·67 inches, being nearly 2 inches above the annual average rainfall of Zurich. Whence came the aqueous vapour which was discharged from the clouds in such deluges of rain on the night of June 13-14?

IN the same number of the *Bulletin Hebdomadaire* it is stated that Dr. Grzygmala, of Podolia, in East Russia, where hydrophobia is very prevalent, has successively treated, without a single failure, more than a hundred cases of hydrophobia with the leaves of *Xanthium spinosum*. It is necessary that the remedy be applied shortly after the person has been bitten and before the symptoms of hydrophobia become manifest—the treatment consisting of 9½ grains of the leaves of *Xanthium* in the form of a powder, thrice a day for three weeks. For animals the treatment is the same except that the dose is larger.

THE additions to the Zoological Society's Gardens during the past week include a Spotted Eagle (*Aquila nevia*), European, presented by Mr. W. Proddham; two Common Barn Owls (*Strix*

flammea), European, presented by Miss M. A. Hicks; a Yellow-bellied Liotrix (*Liotrix luteus*) from India, presented by Mr. W. Prehn; a Common Cuckoo (*Cuculus canorus*), European, presented by Mr. J. Paddy; an Egyptian Vulture (*Neophron percnopterus*) from North Africa, deposited; two White-crested Laughing Thrushes (*Garrulax leucolophus*) from the Himalayas, a Sun Bittern (*Eurypyga helias*) from South America; a Hawk-billed Turtle (*Chelone imbricata*) from the West Indies, purchased.

SCIENTIFIC SERIALS

American Journal of Science and Arts, July.—Prof. Loomis here gives some interesting results obtained from observations of the United States Signal Service. Whenever an area of low barometer is formed in the United States, there seems to be always an area of high barometer about 1,200 miles to the south-east. The same thing was found to hold for the Atlantic Ocean and Europe, the average distance between the areas being here 1,700 miles, and the direction rather more southerly. Areas of high pressure are probably formed from air that is expelled from those of low. Low barometer is generally associated with high temperature, so we might conclude that a temperature above the mean in Iceland would be accompanied by one below the mean in Central Europe; this was verified. An unusually high barometer in Central North America may be the result of storms 1,500 or 2,000 miles to the north-west. Prof. Loomis found the average forms of the isobars about an area of maximum pressure, an oval with major axis nearly double the minor. The forms about minima were nearly the same; as were also the directions of the major axes in both cases (N.E.). The rainfall is least when the pressure at the centre of a storm is increasing (or the storm diminishing in intensity), greatest in the opposite case. The stationariness for several days of storms near Nova Scotia or Newfoundland, seems due to unusual rainfall there. Prof. Loomis lastly furnishes data as to the course and velocity of storms in tropical regions.—Prof. Farlow has studied a disease which caused much loss of olive and orange crops in California last summer. He says that though first attracting the eye by the presence of a black fungus, the disease is not caused by it, but rather by the attack of some insect, which deposits some gummy substance on the leaves and bark, or so wounds the tree as to cause some sticky exudation on which the fungus especially thrives. The fungus greatly aggravates the trouble, but in seeking a remedy, it is necessary to look further back.—Mr. Gilbert gives a description of the Colorado Plateau Province as a field for geological study; it offers valuable matter in an advantageous manner.—Drs. Blake and Genth describe a vanadium mica found on the western slope of the Sierra Nevada, and to which the name of Roscoelite is given, in honour of Prof. Roscoe. It contains quite a large percentage of vanadium (20·16), which is present as V_6O_{11} . This mica is found in the hanging wall of a small quartz vein, the country rock being porphyry; fine scales of gold occur between the crystals.—We may further mention a series of notices of recent American earthquakes (1874-76), by Prof. Rockwood.—Mr. Grinnell describes, in the Appendix, a Crinoid from the Cretaceous formation of the West.

Poggendorff's Annalen der Physik und Chemie, No. 5, 1876.—In this number we have the first portions of two valuable papers on electrical subjects—one by M. Root on dielectric polarisation, the other by M. Wiedemann, on the laws of passage of electricity through gases. We shall return to these.—M. Edlund passes under review some researches on what he had termed *galvanic expansion*; confirming and extending the observations of Streintz in reply to objections urged by Wiedemann against the results from which M. Edlund inferred that there was such expansion (distinguishable from that by heat). From the fact that it disappears pretty much according to the same laws as heat, the author and M. Streintz supposed that it was caused by molecular oscillations which are gradually communicated to the surrounding medium; and anything furthering this communication must so diminish said expansion. Now, M. Exner lately experimented by keeping the wire through which the current was sent, in cold water; and the result was an entire disappearance of galvanic expansion, as might have been expected, but the phenomenon was not thereby proved (as M. Exner thought) to have no existence.—In

experimenting as to the influence of current strength, temperature and concentration of solution, on the transference of ions, M. Kirmis met with a peculiar regular arrangement of silver crystals in the platina dish of a silver voltameter. The result is best obtained with a considerable electromotive force. The intensity should not exceed a certain limit (not more than 0.28 mgr. of silver being separated out per square cm. and minute). The concentration of the solution should be between 5 and 10 per cent., and a positive electrode with sharp points should be used. The deposited strips appear as accumulations of moss-like dendrites, which, under the microscope, are found to be made up of cubes and octahedra.—In works which describe the process that occurs in sounding an open or closed pipe, it is usually represented that the air current from the slit at the bottom, breaking against the upper lip, imparts shocks to the air column of the pipe, and these are the cause of the air-column being thrown into vibrations. M. Sonreck, an organ-maker of Cologne, here questions this hypothesis, and supposes instead a pendulum-like to and fro motion of the blast-current, which has the widest amplitude at the edge of the upper lip, is dependent on the elasticity of the air-column of the pipe and the pressure of the outer air, and so is subject to the laws of vibration of the air-column. He explains the process in some detail, and some interesting forms of experiment are described. For complete determination of any colour it is necessary to know three things, viz., the colour-tone, purity, and brightness. The first is found by ascertaining that spectral colour by whose mixture with white the colour in question is had. M. von Bezold describes two methods of doing so simply and without trouble. They are closely related to a plan suggested by Vierordt for producing mixtures of pigment and spectral colours.—M. Gieseler describes a simple apparatus for measuring small intervals of time by a determination of the time of fall of a freely-falling body.—We further note papers on the specific heat of cerium, lanthanum, and didymium, by M. Hillebrand; and on experiments on the electro-motive forces induced in unclosed circuits through motion, by M. Helmholtz.

THE current number of the *Ibis* commences with a paper by Prof. Newton and Mr. Edward Newton on the Psittaci of the Mascarene Islands, in which the Seychellian *Palaeornis wardi* is figured, and the species peculiar to each of the islands are described, four of the eight being extinct, one barely surviving, and the remainder diminishing in number.—Mr. H. Seebohm and Mr. J. A. Harvie Brown continue their notes on the birds of the Lower Petchora, figuring the eggs of *Tringa minuta* from Dvoinik.—Mr. D. G. Elliot in his notes on the Trochilidae discusses the genera *Cyanomyia* and *Heliotrypha*, describing seven species of the former, one, *C. microrhyncha*, being new, and three of the latter, *H. squamigularis*, of Gould, being shown to be *H. barrali*, of Mulsant and Verreaux.—Mr. H. E. Dresser continues his notes on Severtzoff's "Fauna of Turkestan," specially referring to *Ciconia mycteriarrhyncha*, a species with the bill shaped like that of *C. boyciana*, but red.—Mr. R. Swinhoe describes a collection of birds from Hakodadi, in Northern Japan, sent by Mr. T. W. Blakiston. Two new species are described and figured, *Arundinax blakistoni* and *Schenckius pyrrhulinus*.—Lord Walden makes notes on the late Colonel Tickell's manuscript work entitled "Illustrations of Indian Ornithology." The work was presented by the author in 1874 to the Zoological Society. It is beautifully illustrated and fully annotated, forming seven small folio volumes. Figures are given of *Picus atratus*, *Zosterops siamensis*, and *Dicaeum trigonostigma*, together with a brief account of the contents of each volume.—Mr. P. L. Sclater records further ornithological news from New Guinea, describing results arrived at by Beccari, Bruijn, and D'Albertis. The collections of the two first-named contain 4,600 specimens, referable to 350 species, of which 58 are said to be new to science.—Mr. J. H. Gurney continues his criticism of Mr. Sharpe's "Catalogue of the Accipitres in the British Museum."—Lord Walden describes and figures a new species of *Trichostoma* from Celebes, *T. finschi*, and finally Mr. Salvin describes a new *Odontophorus*, *O. cinctus*.

Geological Magazine, Nos. 141, 142, 143, 144, 145.—The articles that are running through several numbers are:—Sketch of the geology of Ice and Bell Sounds, Spitzbergen, by Prof. A. E. Nordenskjöld, with woodcuts.—The probable conditions of deposit of the Palæozoic rocks in the northern hemisphere, by Henry Hicks, with a folding plate comparing Europe with North America.—Cretaceous Gasteropoda, by J. Starkie Gardner.—There are several papers on glaciers and ice-action: among

them are Mechanics of Glaciers, David Burns.—Ice-work in Newfoundland, John Milne (of the Mining School, Japan).—Glacial events in England and Wales, D. Mackintosh.—The erosion of lake-basins by glaciers, Osmond Fisher.—Notes on glaciers, T. G. Bonney.—Sub-aërial denudation *versus* glacial erosion, W. Gunn.—There are also many letters on the subject of the origin of lake-basins from Prof. Ramsay, James Geikie, Prof. Hull, Prof. Green, J. W. Judd, T. V. Holmes, Hugh Miller.—The other papers are: On the Carrara marbles, by G. A. Lebour, showing why they are now regarded as of Carboniferous age instead of Jurassic, as recently they have been.—The transport of volcanic dust, by Prof. Nordenskjöld. This is a record of the passage of volcanic dust from Iceland to the east coast of Sweden, a greater distance than has ever been known before.—A paper on the vertical range of graptolites in Sweden, by G. Linnarsson, is accompanied by one on the correlation of the graptolitic deposits of Sweden with those of Britain, by Prof. H. A. Nicholson.—On the exhumation and development of *Omosaurus armatus*, Owen, by W. Davies, of the British Museum. This is a popular description of how the remains were removed from the Kimmeridge clay of Swindon to the British Museum.—On the volcanic outbursts which preceded the formation of the Alpine system, by J. W. Judd.—In connection with Mr. Hick's papers on Palæozoic rocks is one by Prof. Linnarsson, criticising some of his conclusions.—There are also some minor papers and a number of miscellaneous articles.

SOCIETIES AND ACADEMIES

VIENNA

Imperial Academy of Sciences, Feb. 3.—Contributions to a knowledge of interstitial inflammation of the liver, by M. Müller.—On the ending of nerves in the epidermis of mammals, by M. Mojsisovics. He examined (after Eimer) the snout of the mole, and of some foreign related species; and he comes to a different conclusion regarding the "Eimer organs." M. Riegler exhibited an osteophyte, weighing 1,120 gr., that had been found in the skull of an ox. The animal had seemed quite fresh and healthy.

Feb. 10.—On the colours of thin crystal plates, by M. Ditscheiner. These arise through interference of the internally reflected light rays, and are seen in crystal plates (gypsum) of much greater thickness than that which simply refracting plates must have in order to show the ordinary colours of thin plates.—On the changes in arterial blood pressure after closure of all the arteries of the brain, by M. Mayer. There is at first great increase of arterial blood pressure, which is not due either to the mechanical closure, nor to increased activity of the heart, but to intensive stimulation of the cerebral vasomotor centre, through deficient access of arterial blood. In five or ten minutes this excited state of the brain centre passes into that of complete paralysis, indicated by low blood pressure. The author draws some inferences for the doctrine of the vasomotor centres in the brain and spinal cord.

GENEVA

Physical and Natural History Society, March 16.—Prof. Plantamour, fifteen years ago, gave a *résumé* of the results of the meteorological observations made at Geneva since 1826. Disposing, to-day, of fifty years' observations, he examined the modifications made on his conclusions by that new period of fifteen years, and other results which may be deduced. The mean of temperature has been in general greater during the last fifteen years, and enables us to increase by $\frac{1}{10}$ of a degree the annual mean previously deduced. All the monthly means must be slightly augmented, if they are to be derived from fifty years of observation instead of thirty-five; except in the case of the month of December. The following is the table of means (in centigrade degrees) according to the two series:—

	Jan.	Feb.	Mar.	April	May	June	July	Aug.
1826-1860 ...	- 0.34	+ 1.32	4.48	8.61	12.88	16.78	18.53	17.80
1826-1875 ...	- 0.08	+ 1.60	4.60	8.97	13.20	16.81	18.81	17.91
Difference ...	+ 0.26	+ 0.28	+ 0.12	+ 0.36	+ 0.32	+ 0.03	+ 0.28	+ 0.11
	Sept.	Oct.	Nov.	Dec.				
1826-1860 ...	14.29	9.81	4.45	+ 0.86				
1826-1875 ...	14.66	9.88	4.55	+ 0.80				
Difference ...	+ 0.37	+ 0.07	+ 0.10	+ 0.06				

The same result appears if we divide the year into seventy-three periods of five days, or pentades, according to the